* NOTICES *

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the display of a pocket mold information transmitter.
[0002]
[Description of the Prior Art] it is shown to JP,6-133081,A by the Prior art -- as -- a portable telephone -- general -- a palm -- it is in the configuration where a lengthwise direction is long and a longitudinal direction is short, on the basis of size. And in the graphic display side of the portable telephone, it is as short as said configuration to the lengthwise direction of hard flow, and the long oblong display is performed in the longitudinal direction.
[0003] Moreover, with the display shown in JP,6-301341,A, the screen of equipment is rotated mechanically and there is a configuration switched to vertical length or landscape orientation.
[0004] moreover, the pocket mold shown in JP,7-168529,A -- a well-informed person -- the photosensor formed around the display with the processor detects an operator's location, and there is a configuration which switches the display direction longwise or oblong with the location.
[0005]
[Problem(s) to be Solved by the Invention] However, with the above conventional techniques, the screen configuration of a display is limited to the die length beside the appearance of a portable telephone, since the screen product is moreover narrow because of [long in a longitudinal direction] an oblong display short to a lengthwise direction, an image also becomes small and a check and setup of the image at the time of camera photography are difficult. Furthermore, since a cellular phone is possessed single hand, there are troubles, like the stability at the time of camera photography is bad.
[0006] Moreover, a part for a display has [the method which rotates a display mechanically and changes the display direction] weak reinforcement small and because of a thin shape. In order to use carrying furthermore, when it is rotated, there is a trouble that heights tend to be equivalent to other parts, and tend to break into them.
[0007] Moreover, when an operator has a display in a hand by the method which changes the display direction with the photodetector formed in the circumference part of a display, the location of said detector is avoided and there is a trouble of there being ****** attachment ****** and being hard to use a display.
[0008] The purpose of this invention is to offer the display of the pocket mold information transmitter which sets up the optimal display direction for a message, camera photography, reception only, etc. with an easy configuration.
[0009]
[Means for Solving the Problem] In order to attain said purpose, this invention constitutes the screen of said graphic display section longwise in the longwise direction and this direction of a pocket mold information transmitter, and establishes the longwise display means which indicates said display direction by longwise at the time of a message, and the oblong display means which indicates by oblong at the time of camera photography or reception only.

[0010] Moreover, the erection display means in which the display screen always indicates by erection is established to an operator from the detecting signal of the gravity direction detector which detects the gravity direction or the inclination direction of the pocket mold information transmitter to the gravity direction, and said gravity direction detector.
[0011] Moreover, 2 sets of sound reception sections which change voice into an electrical signal, and 2 sets of pronunciation sections which change an electrical signal into voice further are prepared. 2nd shot Otobe is stationed next to the 1st sound reception section, and the 2nd sound reception section is arranged next to 1st shot Otobe. By the detecting signal of said gravity direction detector The carrier pronunciation means for switching which switches the 1st actuation of said 1st sound reception section and pronunciation section and the 2nd actuation of said 2nd sound reception section and pronunciation section is established. The gravity direction side is always made into the sound reception section, the gravity direction and the opposite side are always made into the pronunciation section, and the message made consistent with the erection display of a pocket mold information transmitter is enabled, and a possession location has, it changes, and actuation is lost.
[0012] Moreover, by the detecting signal of said gravity direction detector, it moves and the erection display of a pocket mold information transmitter doubles, a change and a possession location have an operator-guidance location, the direction of an actuation name, etc., they are changed [an impaction-efficiency means move each operator guidance location in said display and the name location of each of said operator guidance is established, change of the display direction is followed,], correction is lost, and operator guidance can be performed easily.
[0013] moreover, the detecting signal of said gravity direction detector -- said pocket mold information transmitter -- a horizontal direction -- if -- the oblong display means which indicates the display direction of said display by oblong, and a perpendicular direction -- if -- the longwise display means made a longwise display is established, further, said erection display means is established and an operator controls the display direction of said display only by changing the location of said pocket mold information transmitter into a horizontal or a perpendicular direction.
[0014] Moreover, said gravity direction detector and said graphic display section are constituted in one.
[0015]
[Embodiment of the Invention] Hereafter, the 1st example of the display of the pocket mold information transmitter of this invention is explained below. Drawing 1 is outline drawing of this invention. The electrochromatic display display which 1 uses the body of a pocket mold information transmitter for an image, an alphabetic character, etc., and 2 uses liquid crystal, and is displayed, The camera head which leads the light to which 3 let the lens pass to an image sensor, the pronunciation section from which 4 changes a sound signal into voice (it is henceforth called a loudspeaker), The sound reception section (it is henceforth called a microphone) from which 5 changes voice and a sound into an electrical signal, and 6 are the touch switch which can perform each directions by showing two or more keys of the various operator guidance displayed in the display screen, and touching the 6a-6j. Moreover, a PUSHU switch with mechanical 6sw and 7 are antennas which transmit and receive an electric wave. Actuation is explained from this drawing. Switch 6sw is supplied to a power source by push and the pocket mold information transmitter 1, and the display direction of the location and key of an alphabetic character or the touch keys 6a-6j appears as a longwise display in the electrochromatic display display 2. Next, the touch keys 6a-6j of this drawing are chosen, a number to be dialed is directed, a partner is called, and a message is started. And when displaying the other party or the image from a oneself side during a message, from a message indication signal, the display direction of the pocket mold information transmitter 1 is made a longwise display as shown in this drawing, it is in a condition [having had the pocket mold information transmitter 1 in the hand], and the contents of a display can be checked.
[0016] Next, if the touch keys 6a-6j are chosen and camera image photography is directed, as shown in drawing 2 R> 2, an oblong indication of the pocket mold information transmitter 1 will be given in the image of the camera head 3 at the electrochromatic display display 2. At this time, an oblong indication also of the direction of an alphabetic character is given also for the location of the touch keys 6a-6j again at an oblong display, and a key position is moved to the location which is easy to operate it, when the

pocket mold information transmitter 1 is possessed oblong. (Only 6j is shown by a diagram) . And an operator turns the pocket mold information transmitter 1 sideways, possesses the camera head 3 neighborhood with the right hand, and then possesses the microphone 5 neighborhood with the left hand. That is, for the configuration possessed with both hands, single hand, rather than possession, since the deflection of the camera head 3 can be decreased, the part and photography can be carried out to stability. Furthermore, for the oblong display which spread the liquid crystal display in the longwise direction of the pocket mold information transmitter 1, it becomes very legible and a photograph can be taken so much easily. Thus, camera photography can be carried out to stability and it is easy to carry out photography by making the display screen of the pocket mold information transmitter 1 a longwise display long to a lengthwise direction. In addition, if it is changed oblong in order to change the image of the scenery of camera photography into a horizontal display from a vertical display, if the pocket mold information transmitter 1 is turned sideways, return and an image will do a handstand to a longwise display. In order to prevent this, ON / off key of display directional change are prepared in a touch key, conversion to an oblong display is suspended to it, and the image from a camera is displayed on it as it is.

[0017] Next, other examples of this invention are shown in drawing 3 . 9 shows a mechanical switch (9a-9j, and 9sw(s)), and operator guidance and a number to be dialed are inputted by pushing. Although this switch is formed instead of the touch sensor 6 in drawing 1 and the electrochromatic display display 2 of drawing 2 , and needs the location of that dedication, a configuration becomes longwise only in that die length and portability is spoiled, the oil dirt of the finger by touch actuation of a display screen is avoidable.

[0018] Next, drawing 4 shows the 1st example drawing 1 of this invention, and the block diagram of drawing 2 R> 2. The photo-electric-conversion signal 51 is acquired from the camera head 50 which consists of a light-receiving lens, a solid state image sensor, a solid state image sensor drive circuit, etc., and this is inputted into a camera circuit 52. A camera circuit 52 consists of a camera digital disposal circuit, a synchronizing signal generating circuit, etc., and generates the video signal 53 of a television signal format from the optical conversion signal 51. And a video signal 53 is outputted in the longwise display direction, and is inputted into the image array conversion circuit 54. The image array conversion circuit 54 consists of RAM (Random Access Memory)55, a write-address generating circuit 56, and read-out address generation circuit 57 grade. A video signal 53 is memorized by RAM55 of the image array conversion circuit 54. Here, synchronizing with the synchronizing signal 58 from a camera circuit 52, a video signal 53 is memorized by the predetermined memory address on RAM55 with the memory address signal 59 outputted in predetermined sequence from the write-address generating circuit 56. Although the video signal 53 once memorized by RAM55 is read from RAM55 by the memory address signal 60 outputted next from the read-out address generation circuit 57 which synchronized with the synchronizing signal 58, ROM1 (not shown [Read Only Memory and]) memorizes beforehand the address generation sequence of the read-out address generation circuit 57, and it outputs the read-out address in an order from ROM1 with the counter which synchronized with the synchronizing signal 58. Here, the scanning direction at the time of the oblong display of the electrochromatic display display 2 is made into the horizontal direction from an upper left edge to a right end toward the oblong display screen, and the scanning direction at the time of a longwise display explains the following as a perpendicular direction from a lower left edge to upper limit toward the longwise display screen. In order to change a longwise display into an oblong display, pixel read-out is performed to a line writing direction from the left best edge toward the longwise display screen, and it is made to display it by the horizontal scanning of the oblong display direction. Therefore, the video signal of a longwise display is first memorized to RAM55. And the read-out address will carry out read-out of the address of a line writing direction to order with the address of the beginning of the line n which is equivalent to the left best edge toward the longwise display screen in the memory location written in by the previous write-address generating circuit 56 as the starting point. After the line is completed, it constitutes so that it may shift to the address of the beginning of the next line n+1 of the previous write-address generating circuit 56 and same read-out may be performed. Thereby, the display direction is convertible for an

oblong display from a longwise display. That is, the video signal 53 for the 1 field of a television signal is memorized to RAM55, and if it reads to the next field period by the above-mentioned approach, the video signal 61 of an oblong display will be acquired from a longwise display. Moreover, what is necessary is to provide RAM55 which memorizes the video signal 53 for the 2 field, and just to constitute so that the signal in which the video signal of a certain field was written by a store and coincidence before 1 field period may be read in order to acquire the continuous television signal.
[0019] Next, the video signal 61 changed into the oblong display is inputted into a terminal 64. On the other hand, the video signal 53 of a longwise display of a camera circuit 52 is inputted into a terminal 62. The signal of the terminal 62 and a terminal 64 inputs the touch keys 6a-6j and a machine switch 6sw signal, the input signal of a transmitter 1, etc., and is switched by the switch 73 controlled by the output signal 65 of the control circuit 80 which generates various control signals. And in the camera photography directions from a touch key, a switch 73 is switched to the terminal 64 side of the video signal 61 changed into the oblong display. Moreover, in the message directions from a touch key, it is switched to the terminal 62 of the video signal 53 of a longwise display. It is switched, and a signal 67 memorizes the information which used the location and the display of an identifier of a touch key, and the condition of a device as the alphabetic character, the graphic form, etc., acquires the signal 70 from the alphabetic character graphic form generating circuit 69 which outputs them with an adder 68, and is displayed on the electrochromatic display display 2. That is, the oblong display which included the alphabetic signal 70 in the oblong display which changed the longwise display from a camera by the image array conversion circuit 54 is performed. Moreover, at the time of a message, the longwise display which included the alphabetic signal 70 in the longwise display from the camera is performed. And an output signal 67 is inputted also into a modulation circuit 81, and transmits vertical length and an oblong image. Here, although an oblong display means becomes this image array conversion circuit 54, if the display at the time of camera image photography is already an oblong display, there is no need of changing, a circuit changing switch 73, the control circuit 80 (for example, the indication signal by conversion ON / off key of the above-mentioned display direction is used.) which controls it will be needed in this case, and they will also be contained.
[0020] Moreover, when the longwise display at the time of camera photography is the same as the image sent from the other party, the image of the other party, i.e., the longwise display at the time of a message, can be used together in the circuit changing switch 73 used by the oblong display, the control circuit 80 which controls it, and this also serves as a longwise display means.
[0021] Next, the output signal 90 of a control circuit 80 is inputted into one side of a modulation circuit 81. In a modulation circuit 81, a microphone 5 and the video signal of a longwise display are modulated, and ON / off control of the output are performed. Moreover, other output signals 92 of a control circuit 80 are inputted into the subcarrier synthesizer 93 which obtains a predetermined oscillation and the frequency of reception from a reference signal, and ON / off control of a circuit 80 are performed. Other output signals 91 of a modulation circuit 81 are inputted into an oscillator circuit 82, and modulate the carrier frequency signal 93 of an oscillator circuit 82. And an oscillator circuit 82 amplifies AF driving power. the signal -- access -- it is led to an antenna 7 through a vessel 93, an electric wave is oscillated, and information is transmitted by the other party. Since the timing of transmission and reception is divided at this time, transmission and reception are not mixed. Then, the transmitted electric wave of the other party serves as this antenna 7 and the signal 96 through the common machine 83, and is inputted into a receive section 85. With an input signal and the output signal 95 of the subcarrier synthesizer 94, a receive section 85 acquires the recovery signal 98 of an input signal. A signal 98 is inputted into the demodulator circuit 86 which restores to voice, a video signal, and an alphabetic signal. The output sound signal 33 of a demodulator circuit 86 is supplied to a loudspeaker 4, and is changed into voice, and through a terminal 63 and a switch 73, a signal 67 is acquired, and the output video signal 34 is inputted into the electrochromatic display display 2, and it is indicated by longwise. Moreover, other output signals 99 of a demodulator circuit 86 are inputted into a control circuit 80, and the various timing of operation at the time of reception is controlled. Furthermore, the output synchronizing signal 35 of a demodulator circuit 86 is inputted into the electrochromatic display display 2 through a terminal

76 and a switch 74, synchronous timing is obtained, and a stable image is obtained.
[0022] Next, the 2nd one example of this invention is explained to a detail using drawing 5 . The gravity direction detector to which 4a detects the inclination of the account pocket mold information transmitter 1 to the gravity direction and the gravity direction with the property in which a loudspeaker and 5a tend to stop in the direction with migration in the gravity direction of a liquid at a microphone, and 21 tends to stop at stability, and 11, 25 and 74 are switches which switch a signal. Next, actuation is explained. The gravity direction detector 21 is constituted by the electrochromatic display display 2 and one, and four kinds of detecting signals 22 which obtained the display position of the electrochromatic display display 2 on the basis of the gravity direction are obtained as shown in Table 1.
[0023]
[Table 1]
表 1

		センサー位置			
カラー液晶表示方向		A1	B1	C1	D1
縦長	正立	0	1	1	1
	逆転	1	0	1	1
横長	カメラ右	1	1	0	1
	カメラ左	1	1	1	0

[0024] A detecting signal 22 is inputted into a control circuit 80. A control circuit 80 judges the contents of the detecting signal 22. For example, to an operator, as shown in Table 1, when the pocket mold information transmitter 1 is possessed, as for (the possession direction is opposite) and a detecting signal 22, the longwise direction and an image output a digital signal 1011, when a display position is an inversion. This is judged in a control circuit 80. And in message directions, each circuit changing switches 11, 25, and 74 and the alphabetic character graphic form generating circuit 69 are controlled by the output signal 27 of a control circuit 80, and 13 and 14 to make a display position the erection display of the longwise direction. This actuation is further stated to a detail below. The signal 28 which switched and acquired the video signal 34 (for example, oblong display) of reception of a demodulator circuit 86 and the camera photography signal 53 (longwise display) of a camera circuit 52 by the circuit changing switch 25 is inputted by a terminal 29 and the image array conversion circuit 54. Via a switch 11, the video signal 34 and said camera photography signal 53 of reception are inputted into the electrochromatic display display 2, and a terminal 29 displays the image of reception (message) or camera photography in the original display direction.
[0025] On the other hand, the image array conversion circuit 54 changes the display direction into an oblong display from a longwise display by the write-address generating circuit 56 mentioned above, RAM55, and ROM1 of the read-out address generation circuit 57. However, since oblong, in order to change into a longwise display, the read-out address of RAM55 is beforehand memorized to new ROM2 (not shown), and the read-out address is directed in an order from ROM2 with the reverse counter which synchronized with the synchronizing signal 58. Then, what is necessary is just to read the screen conversion approach from the oblong display screen to above [of a train] with the lowermost pixel as the starting point in the left toward the oblong display screen. Then, the read-out address in ROM55 reads the address in order toward the upper part on the same level with m address of the beginning of the line which is equivalent to the left lowest edge toward the oblong display screen of the memory address written in landscape orientation by the previous write-address generating circuit 56 as the starting point. After the train is completed, it constitutes so that it may shift to the address of m+1 of a companion and same read-out may be performed. What is necessary is just to change the previous origin read-out address m inside a screen, since there are few important parts and the image of a periphery hardly becomes a problem if that part is set up by longwise conversion at this time so that it may shift to the periphery of a full screen although the image chip by the difference in the number of pixels in every direction occurs. The video signal 61 which changed into the longwise display by this the oblong indicative data written in RAM55 is acquired. here -- a longwise display means -- this image array

conversion circuit 54 -- or if the display at the time of a message is already a longwise display, since there is no need of changing, a circuit changing switch 11, the control circuit 80 which controls it are required in this case, and these are also contained. And although addressing of ROM1 and ROM2 in address read-out actuation is performed by the counter which used the synchronizing signal, it is possible by constituting this from a well-known updown counter, and changing the count direction by a rise and down with the output signal 15 of a control circuit 80 the same as that of the chronological-order foreword of the read-out address beforehand memorized to ROM1 and ROM2 or to change to an inversion. Thereby, erection and a handstand display are further performed to the display changed into the longwise display or the oblong display. Moreover, the same as that of the write address of RAM55 or the display direction which changed to the reversed read-out address and was written in RAM55, erection, or a handstand display can be obtained by connecting the output signal of a direct updown counter to RAM55, and changing the count direction by a rise and down with the output signal 15 of a control circuit 80 similarly, without minding ROM1 and ROM2 of address read-out actuation. And a control circuit 80 performs such operator guidance. for example, the vertical length of the image sent by the partner and the distinction signal (the data A -- 1 -- longwise --) of an oblong display 0 -- being oblong -- the vertical length of pocket mold information transmitter 1 self, and an oblong distinction signal (the data B -- 1 -- longwise --) The information on the detecting signal 22 of the gravity direction detector 21 is judged by the control circuit 80, the counter and circuit changing switches 11 and 25 for read-out are controlled by that 0 is oblong and the output signal which corresponded, and an erection display is performed by it. Thus, the counter which shows the forward direction and hard flow of address read-out, such as a longwise display means, an oblong display means, and RAM55, is operated, and the configuration which is made to perform an erection display is called an erection display means. That the concrete actuation of each is shown in Table 2 and Table 3.

[0026]

[Table 2]

表 2

モード	表示方向	受信機の表示部の位置								
		縦長表示方向、正転	SW11	縦長表示方向、逆転	SW11	横長表示方向、正転 (カメラ右側)	SW11	横長表示方向、逆転 (カメラ左側)	SW11	SW26
通話 (送信側)	縦長	———	29端子	RAM55の読出カウンタをダウン*	10端子	———	29端子	RAM55の読出カウンタをダウン*	10端子	24端子
	横長	ROM2の読出カウンタをアップ	10端子	ROM2の読出カウンタをダウン	10端子	ROM2の読出カウンタをアップ	10端子	ROM2の読出カウンタをダウン	10端子	24端子
カメラ (受信側)	縦長	ROM1の読出カウンタをアップ	10端子	ROM1の読出カウンタをダウン	10端子	ROM1の読出カウンタをアップ	10端子	ROM1の読出カウンタをダウン	10端子	25端子
	横長	———	29端子	RAM55の読出カウンタをダウン*	10端子	———	29端子	RAM55の読出カウンタをダウン*	10端子	25端子

[0027]
[Table 3]

表 3

モード	表示方向	受信機の表示部の位置									
		縦長表示方向、正転		縦長表示方向、逆転		横長表示方向、正転		横長表示方向、逆転			
			SW11		SW11		SW11	(カメラ左側)	SW11		SW26
通話 (送信側)	縦長	――	29端子	RAM55の読出カウンタをダウン*	10端子	ROM1の読出カウンタをアップ	10端子	ROM1の読出カウンタをダウン	10端子		24端子
	横長	ROM2の読出カウンタをアップ	10端子	ROM2の読出カウンタをダウン	10端子	――	29端子	RAM55の読出カウンタをダウン*	10端子		24端子
カメラ (受信側)	縦長	――	29端子	RAM55の読出カウンタをダウン*	10端子	ROM1の読出カウンタをアップ	10端子	ROM1の読出カウンタをダウン	10端子		25端子
	横長	ROM2の読出カウンタをアップ	10端子	ROM2の読出カウンタをダウン	10端子	――	29端子	RAM55の読出カウンタをダウン*	10端子		25端子

*：ROM1，2を介さずに、RAM55のデータを直接，読出カウンタで読みだす。

[0028] As for this table, the display direction shows actuation of vertical length, each switch when oblong, the read-out counter of RAM55, and the counter of ROMs 1 and 2 the case at the time of a message and camera photography. The display direction is carried out in the longwise direction at the time of a message, and Table 2 makes it landscape orientation at the time of camera photography, and each actuation for indicating by erection is shown. Moreover, Table 3 shows each actuation for controlling the display direction and indicating by erection so that it may double in the display direction

of the display position of the now by the side of a transmitter 1. At this time, the synchronizing signal 35 of reception and the synchronizing signal 58 from a camera are interlocked with a switch 25, and are switched by the switch 74, a store, the read-out address generation circuit 57, and the electrochromatic display display 2 are supplied, and the synchronization of each circuit is obtained. Thus, when an operator possesses the pocket mold information transmitter 1 in arbitration, the gravity direction detector 21 detects the condition, and an input signal and the contents of a display are judged in a control circuit 80, and each circuit is controlled, and the actuation which correction becomes possible in the erection direction, and the pocket mold information transmitter 1 has the direction of a liquid crystal display, and is changed automatically can be excluded. Since a camera location is detectable with the gravity direction detector 21 at this time, when the pocket mold information transmitter 1 is moved to a longitudinal direction or its opposite direction from length, the change of the display direction can be controlled from the detecting signal of that, and correction becomes possible in the erection direction about the direction of a liquid crystal display automatically. Moreover, although these tables 2 and 3 are not displayed about the case where a camera location is reversed up and down, an erection display can be performed by using also about this the approach mentioned above.

[0029] Next, the detail configuration of this gravity direction detector 21 is shown in drawing 6 R> 6. The common electrode F is arranged on one side of the inside which inputs the **** liquid G (example; brine) inside the appearance E of an abbreviation rhombus. Moreover, A1, B1, C1, and D1 of four electrodes are arranged at four edges of other one side of Appearance E, and a flow with Electrode F is detected through the **** liquid G. For example, as shown in this drawing, when the electrochromatic display display 2 is located perpendicularly, except electrode A1, it flows through all with Electrode F through the **** liquid G, and a signal is transmitted to a control circuit 80, as shown in Table 1, a liquid crystal display is longwise and the condition of having stood erect to an operator can be detected. That is, when the pocket mold information transmitter 1 is possessed in arbitration, and the **** liquid G moves in the gravity direction, the electrode of Tokoro not flowing is obtained and the horizontal of the current position of a liquid crystal display side or a perpendicular direction can be detected by detecting it. Moreover, the opposite side of Tokoro's electrode location through which it does not flow can judge with the gravity direction. Furthermore, if one more of this is prepared and it is arranged in this drawing and the direction of a right angle, level or the perpendicular direction before and behind a liquid crystal front face can be detected, and it will become detectable about a fine location. In addition, an appearance may not be the object limited to a rhombus, but a round shape and a polygon are sufficient as it. Moreover, the **** Kinji author:name of the conventional inclination sensor; although the configuration which the sensor known diagrammatically talks and detects change of the electrostatic capacity of a publication and the location of a pendulum to :1995 year 6 month 15 day issue:p146-p147 may be used, there is an advantage to which a configuration becomes easy as compared with it. Furthermore, since the gravity direction detector 21 uses a liquid like an electrochromatic display drop, the electrode is constituted on both sides of the liquid and it can manufacture by the same approach, there is an advantage which can make cost cheap by manufacturing to an electrochromatic display drop and one.

[0030] Moreover, by drawing 5 , the 2nd loudspeaker from which 4a changes a sound signal into voice, and 5a are the 2nd microphone which changes voice into an electrical signal, and loudspeaker 4a is arranged next to a microphone 5, and is connected to the output signal 36 of a demodulator circuit 86. Microphone 5a is arranged next to a loudspeaker 4, and is inputted into a modulation circuit 81 through a signal 37. When an operator possesses the pocket mold information transmitter 1, by the detecting signal 22 of the gravity direction detector 21, the perpendicular direction of the electrochromatic display display 2 of the pocket mold information transmitter 1 is detected, and it switches in a modulation circuit 81 so that the microphone 5 by the side of the gravity direction or microphone 5a may operate by the detecting signal. It switches to the reverse inside a demodulator circuit 86 so that the loudspeaker 4 of the gravity direction and the opposite side or loudspeaker 4a may operate. That is, it is constituted so that the microphone by the side of the gravity direction may operate and the loudspeaker of the opposite side of the gravity direction may always operate. This is called a carrier pronunciation means for

switching. Since message, display, and actuation can be performed like the direction of the right even if the condition that the operator possessed the pocket mold information transmitter 1 at first when the difference of a microphone and a loudspeaker location was lost equivalent and used together with the erection display means of the electrochromatic display display direction by this is mistaken, there is no need of changing with it, it uses and wins, and ** is good. In addition, when the inclination of the pocket mold information transmitter 1 is level, the actuation before a microphone and a loudspeaker is held and it is made not to answer actuation of sudden change.

[0031] Moreover, the location of the touch keys 6a-6j and the display of each of that name By the output signal 13 of a control circuit 80, it is carried out by controlling the alphabetic character graphic form generating circuit 69 which memorized all of each display direction of the electrochromatic display display 2, the alphabetic character at the time of the erection and handstand, or the location of a graphic form (this). Since the detecting signal 22 of an alphabetic character graphic form generating means and the gravity direction detector 21 is judged by the control circuit 80 and the physical relationship of the display direction and an operator is acquired, an operator performs the location of the touch keys 6a-6j, and migration of each of that name in the location which is easy to operate the pocket mold information transmitter 1 in the condition. This actuation is performed in a control circuit 80 or the alphabetic character generating circuit 69, and become an impaction efficiency means, for example, by oblong display, when the camera head 3 is right-hand side Reading and displaying the memory arranged near the finger of the possessor of the location of touch keysa [6]-6j display-bottom from the alphabetic character generating circuit 69, and possessing the pocket mold information transmitter 1, actuation distance is close brought as much as possible for the graphic form and alphabetic character of operator guidance to an operator, and usage ****** is improved.

[0032] Moreover, in addition to a message, since the pocket mold information transmitter 1 can be used also for reception only with the master stop of transmit data, in that case, the mode is directed, a control circuit 80 judges this, and it inputs the receiving video signal 34 of the longwise display at the time of reception into the image array conversion circuit 54 by the touch keys 6a-6j, and is changed into an oblong display by the oblong display means. Thereby, it is the oblong display which opened the display screen, and there is an advantage of being legible.

[0033] Moreover, the gravity direction detector 21 has detected the location on which the pocket mold information transmitter 1 is put to the gravity direction. Moreover, since an operator generally has a head in the gravity direction and the opposite side, as for the gravity direction, a location with an operator will be shown. Then, if a detection location is near a perpendicular direction, the display direction will be made longwise using a longwise display means, and if it is near horizontal, the display direction will be performed oblong using an oblong display means. Furthermore, there is an advantage which can lose the actuation changed with [an operator's display is legible and] the pocket mold information transmitter 1 with an erection display means since it always stands erect to an operator. Furthermore, if the actuation changed with the pocket mold information transmitter 1 on the contrary is performed, there is also an advantage which can change the display direction in response to it. Moreover, since the gravity direction detector 21 forms in the interior of the pocket mold information transmitter 1, there is [an advantage which does not restrict an operator's possession location].

[0034]

[Effect of the Invention] Since according to this invention the screen product was improved and long ****** of the electrochromatic display screen was made the oblong display as a longwise direction of the pocket mold information transmitter 1 at the time of camera photography or reception only, there is legible effectiveness. So, there is effectiveness of being easy to set up image photography. Moreover, at the time of image photography, a pocket mold information transmitter is widened, and since it is held with both hands, there is effectiveness of reduction of a camera deflection. Moreover, since it was made the longwise display at the time of a message, there is effectiveness of the conspicuousness in a talk state, the ease of carrying out of actuation, etc. Furthermore, since an oblong display is electronically switched as it is longwise, the projection at the time of carrying is lost and there is effectiveness which cannot break easily.

[0035] Moreover, since it can display that the electrochromatic display display direction of the pocket mold information transmitter 1 always stands erect to an operator with the gravity direction detector and an erection display means, there is effectiveness which makes correction of a possession location unnecessary.
[0036] Moreover, a carrier pronunciation means to arrange another microphone respectively next to another loudspeaker into the next door of a microphone, and a loudspeaker, and to control it by the detecting signal of the gravity direction detector, By the location means for switching which incorporates various actuation switches in the graphic display section, and moves the location and name of an actuation key, however it may always possess the pocket mold information transmitter 1, a microphone operates a loudspeaker to the gravity direction side of the pocket mold information transmitter 1 in the opposite side. And the pocket mold information transmitter 1 which carried out near of an operator guidance location and its name to the operator, made it easy to operate it and always indicated the display by erection can be talked over the telephone, further, it has and the actuation to change can be omitted.
[0037] Moreover, if the gravity direction detector 21 shows the physical relationship of the pocket mold information transmitter 1 and an operator, is the detecting signal, can set an electrochromatic-display display as a longwise display and an oblong display and doubles it with an erection display means, an operator is changing the possession direction of the pocket mold information transmitter 1, and the actuation of the effectiveness that the favorite display direction can be set up, and a pocket mold information transmitter 1 which has and changes can omit.
[0038] moreover, the gravity direction detector flow and is unjust -- it is easy to use in order not to restrict the possession location of the pocket mold information transmitter 1, since a connoisseur is detected and it is [simplicity / a configuration / and the interior] detectable.
[0039] Furthermore, by an electrochromatic display display and really making it a configuration, the configuration of the liquid crystal display section can be used, and cost can be made cheap.

[Translation done.]